Pre-Engineering Program

Engineering programs require students to complete fundamental courses in calculus, differential equations, chemistry, physics, computer science, and engineering science during their first several years of college. The Pre-Engineering program at Winthrop provides an opportunity to take these courses in a setting characterized by small classes, individual faculty attention, and access to modern instrumentation. A science or math degree also provides a solid academic foundation that is ideal preparation for professional development in engineering.

Engineering Degrees Available at, e.g., Clemson University

Chemical Engineering
Electrical and Computer Engineering
Civil Engineering
Biosystems Engineering
Industrial Engineering
Ceramics and Materials Engineering
Environmental Engineering
Mechanical Engineering
Textiles, Fiber and Polymer Science

Required Pre-Engineering Program	**Semester Hours**
CISM 101	0-1
WRIT 101-102	6
CHEM 105-107, 106-108	8
CHEM 301-302, CHEM 303-304 [1]	0-8
MATH 201,202,302,305,300,QMTH 205[2]	21
PHYS 211-211L, PHYS 212-212L	8
WRIT 465, SPCH 201[3]	3-6
World or American Literature (ENGL 205, 206 ,209 or 210), or 300 –level modern (foreign) language literature	3
Social Science pair–two courses in a single subject such as(Economics, History, psychology, political science, or sociology--ECON 215-216 Recommended).	6
Humanity or Social Science Electives[4]	6
Engineering Problem Solving and Design (ENGR 120)[5]	3
Introduction to Engineering (ENGR. 101)[5] (Included in PHYS 211L and PHYS 211L)	2

1. Biological engineering (4cr hrs) and chemical engineering (7cr hrs) Only,
2. Electrical and computer engineering requires advanced calculus (e.g. vector calculus-MATH 503) instead of statistics (QMTH 205)
3. Some majors do not require both of these advanced communications courses, but they are recommended for the dual-degree programs.

Consult the Clemson Catalog or Website (http://www.clemson.edu/ for guidance.

4. The Clemson Engineering Policy on Humanistic-Social Science Electives should be consulted for details on acceptable courses and depth requirements. Biological Engineering requires at least one economics course (e.g. ECON 215).
A course in a technical programming language such as C++ (CSCI 207) may be substituted for an engineering problem solving course such as ENGR 120. A science lab such as PHYS 211L or PHYS 212L may be substituted for ENGR 101.

Engineering Courses Recommended to be taken Before Transfer to Clemson.
(Possibly during summer sessions at Clemson.)

Intended Curriculum	**Clemson Course Number** (Visit :http://www.clemson.edu/for course description)
Biological Engineering	EM 201, EM 202
Chemical Engineering	EM 201, ChE 211
Ceramic and Materials Engineering	CME 221,CME225,CME 226
Civil Engineering	EM 201.CE 251
Electrical and Computer Engineering	ECE 201, ECE 202. CpSC 111
Industrial Engineering	EM 201, IE 201
Mechanical Engineering	EM 201, ME 202 or 203

Recommended engineering courses that can be taken at Winthrop.	**Semester Hours**
CSCI 110 or 151, 207, 208	9
PHYS 331,315,321, 350	12